

REMARKS

This Amendment is in response to the Office Action mailed on July 9, 2002. Claims 1-20 are pending in the application. Claims 1-10 are withdrawn from consideration. Claim 11-18 are rejected and claims 19-20 are objected to as being of improper dependent form. Applicant hereby responds to the rejection of claims 11-18 and objection of claim 19-20 as follows.

**RESPONSE TO OBJECTION TO CLAIMS 19-20 UNDER 37 C.F.R. §1.75(c)**

Claims 19-20 were objected to under 37 C.F.R. §1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claims. Claims 19-20 have been amended and as amended are in proper dependent form pursuant to 37 C.F.R. §1.75(c).

Pursuant to M.P.E.P. §608.01(n) III INFRINGEMENT TEST, the test for proper dependent form under the fourth paragraph of 35 U.S.C. §112 is whether the dependent claim includes every limitation of the claim from which it depends. Thus, a dependent claim is proper as long as the dependent claim is not infringed by anything that would not infringe the independent claim. Claim 19 recites a glide head formed from the glide head array of the wafer of claim 11, which recites every limitation of the claim from which it depends and is proper under 37 CFR § 1.75(c). Claim 20 as amended recites a detection system including the glide head of claim 19 which is also proper pursuant to M.P.E.P. § 608.01(n). Accordingly, reconsideration and withdrawal of the objection to claims 19-20 under 37 C.F.R. §1.75(c) are respectfully requested.

**RESPONSE TO DEFECTIVE OATH OR DECLARATION**

The Office Action requests that a new Oath or Declaration in compliance with 37 C.F.R. §1.67(a). Applicants

hereby submit a new Declaration in compliance with 37 C.F.R. §1.67(a).

**RESPONSE TO NON-DESCRIPTIVE TITLE**

The Office Action requests that Applicants amend the title to more clearly indicate the invention to which the claims are directed. Applicants have amended the title as suggested by the Examiner.

**RESPONSE TO OBJECTIONS TO THE DISCLOSURE**

The disclosure was objected to based upon recited informalities. The specification has been amended to correct the recited informalities. Reconsideration and withdrawal of the objection to the disclosure are respectfully submitted.

**RESPONSE TO OBJECTIONS OF CLAIMS 15-16 AND 18**

Claims 15-16 and 18 were objected to based upon recited informalities. Applicants have amended claims 15-16 and 18 and as amended, respectfully request that the objections thereto be withdrawn.

**RESPONSE TO REJECTION OF CLAIMS 11-13, 15-16 AND 18 UNDER 35 USC §102(e) BASED UPON SMITH**

Claims 11-13, 15-16 and 18 were rejected under 35 U.S.C. §102(e) as being anticipated by Smith, U.S. Patent No. 6,112,401. Claims 11-13, 15-16 and 18 have been amended to recited *inter alia* a wafer including a glide head array including rows and columns of glide portions having air bearing surfaces contoured on a surface of the wafer and an array of glide transducers on the wafer to form a plurality of glide heads which as amended, is not taught nor suggested by Smith. Reconsideration and withdrawal of the rejection of claims 11-13, 15-16 and 18 based upon Smith are respectfully requested.

**RESPONSE TO REJECTION OF CLAIMS 11-13 AND 15-18 UNDER 35 U.S.C.  
§ 102(b) BASED UPON AYLWIN**

Claims 11-13 and 15-18 were rejected under 35 U.S.C. § 102(b) as being anticipated by Aylwin, U.S. Patent No. 5,452,166 based upon the Abstract and Column 6, line 44 - Column 8, line 7.

Column 6, line 44 - Column 8, line 7 and the Abstract do not teach or suggest the subject matter recited in the amended claims 11-13 and 15-18 and accordingly, reconsideration and withdrawal of the rejection based upon Aylwin et al. are respectfully requested.

**RESPONSE TO CLAIM REJECTIONS UNDER 35 USC §103(a)**

Claim 14 was rejected under 35 U.S.C. §103(a) as being unpatentable over Smith or Aylwin et al. in view of Burger. Claim 14 is dependent upon claim 11 which, as previously discussed, is patentable over Smith and Aylwin et al. and is further patentable over the combination of Smith, Aylwin and Burger which does not teach or suggest the subject matter of claim 11 nor dependent claim 14.

Claim 17 was rejected under 35 U.S.C. §103(a) as being unpatentable over Smith or Aylwin et al. in view of Voldman et al. U.S. Patent No. 5,771,571. Claim 17 is dependent upon claim 11 and recites an array of glide transducers mounted on a surface opposite to the contoured surface of the wafer which is not taught nor suggested by the cited combination of references. Voldman et al. does not relate to a glide head and does not teach or suggest an array of glide transducers on a wafer surface opposite to a contoured surface of the wafer as claimed. Reconsideration and withdrawal of the rejection of claim 17 based upon the cited combination of references are respectfully requested.

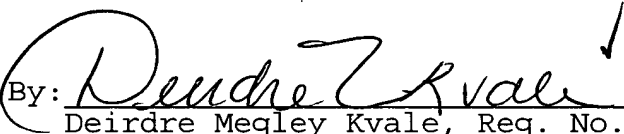
As amended claims 11-18 and new claims 21-25 recite a wafer including a glide head array having air bearing surfaces

contoured on the surface of the wafer and an array of glide transducers on the wafer which is not taught nor suggested by the cited combinations of references nor Yura et al., U.S. Patent No. 5,177,860, which teaches a manufacturing method for a magnetic head and does not teach or suggest a wafer including a glide head array having air bearing surfaces contoured on the surface of the wafer and an array of glide transducers thereon to form a plurality of glide heads as recited in Applicants' claims. Accordingly, reconsideration and allowance of amended claims 11-18, objected claims 19-20 and new claims 21-25 are respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

WESTMAN, CHAMPLIN & KELLY, P.A.

By:  A handwritten signature in cursive script, appearing to read 'Deirdre Megley Kvale', is written over a horizontal line. A small checkmark is visible to the right of the signature.

Deirdre Megley Kvale, Reg. No. 35,612  
Suite 1600 - International Centre  
900 Second Avenue South  
Minneapolis, Minnesota 55402-3319  
Phone: (612) 334-3222 Fax: (612) 334-3312

DMK:tas

MARKED-UP VERSION OF REPLACEMENT PARAGRAPHS ✓

Replacement paragraph for the paragraph beginning at page 4, line 28 and ending at page 4, line 32:

FIG. 8 is a fragmentary perspective view of a section of wafer with the top surface of wafer contoured for the air bearing surface of glide heads using a thermal transducer mounted directly on the air bearing surface.

Replacement paragraph for the paragraph beginning at page 5, line 18 and ending at page 6, line 6:

Suitable wafers made from aluminum oxide/titanium carbide composites (AlTiC) are available from a variety of vendors including Sumitomo (Japan), Greenleaf (Saegertown, PA), Minnesota, Mining and Manufacturing (Saint Paul, MN) and Kyocera (Japan). The surfaces of 4.5 inch by 4.5 inch wafers can have a peak-to-valley flatness of less than about 2  $\mu\text{m}$ . Cutting the wafer into a significant number of glide heads can result in glide heads with significantly reduced peak-to-valley flatness due to the reduced surface area of the glide head relative to the wafer. The contouring of the air-bearing surface onto the smooth surface of the wafer, however, can result in some loss of flatness. Following the contouring of the air bearing surface upon the very smooth and flat surface of the wafer and slicing, the air bearing surface of a glide head can have a flatness of less than about 1  $\mu\text{inches}$ , preferably less than about 0.5  $\mu\text{inches}$ , and more preferably less than 0.2  $\mu\text{inches}$ . Measurements of flatness of a glide head can be performed using optical measuring instruments available from Wyko Corporation, Tucson, Arizona, or from Zygo Industries, Inc., Portland

Oregon.

Replacement paragraph for the paragraph beginning at page 9, line 24 and ending at page 10, line 2:

Placement of the thermal asperity detector directly on the air bearing surface provides for more sensitive asperity detection. Furthermore, the use of multiple thermal transducers can be used to grade the severity of the defect. The production and use of thermal asperity detection heads with the thermal transducer placed on the air bearing surface are described further in commonly assigned and simultaneously filed U.S. Patent application,       /      ,       09/178,580 to Sundaram et al., entitled "GLIDE HEAD FOR ~~THERMAL~~-ASPERITY DETECTION," incorporated herein by reference.

MARKED-UP VERSION OF REPLACEMENT CLAIMS ✓

11. (Twice Amended) A wafer including a glide head array including a plurality of rows and a plurality of columns of glide portions having a surface contoured to form air bearing surfaces contoured on a surface of the wafer and an array of glide transducers on the wafer to form ~~a plurality of glide heads.~~

12. (Amended) The wafer of claim 11 wherein the array of air bearing surfaces comprise rails.

13. (Amended) The wafer of claim 11 wherein said contoured surface of the wafer has a flatness less than about 3  $\mu$ m.

15. (Amended) The wafer of claim 11 wherein the contoured surface ~~for the air bearing surfaces of the plurality of glide heads of~~ the wafer has a peak-to-valley flatness less than about 1 $\mu$  inch.

16. (Amended) The wafer of claim 11 wherein the contoured surface ~~for the air bearing surfaces of the plurality of glide heads of~~ the wafer has a surface flatness less than about 1 $\mu$  inch.

17. (Amended) The wafer of claim 11 ~~and the plurality of the glide heads comprising a wherein the array of glide transducers are~~ mounted on a wafer surface opposite to the air bearing surfaces of the plurality of glide heads contoured surface of the wafer.

18. (Amended) The wafer of claim 11 wherein the contoured surface ~~for the air bearing surfaces for the plurality of glide heads of~~ the wafer has a flatness less than about 0.5 $\mu$  inch.

19. (Amended) A glide head formed ~~sliced~~ from the glide head array of the wafer of claim 11 ~~wherein the contoured surface forms a~~

~~raised bearing surface of the glide head.~~

20. (Amended) A detection system for detecting asperities ~~having~~including the glide head of claim 19 supported on an armature operable to position the glide head over a disc surface for glide testing and including a transducer on the glide head to detect interactions between the glide head and the disc surface.